Before the

FEDERAL COMMUNICATIONS COMMISSION

Washington, D.C. 20554

In the Matter of	)	
	)	
Expanding Flexible Use of the 3.7 to 4.2 GHz Band	)	GN Docket No. 18-122
	)	
Petition for Rulemaking to Amend and Modernize	)	RM-11791
Parts 25 and 101 of the Commission's Rules to	)	
Authorize and Facilitate the Deployment of	)	
Licensed Point-to-Multipoint Fixed Wireless	)	
Broadband Service in the 3.7-4.2 GHz Band	)	
	)	
Fixed Wireless Communications Coalition, Inc.,	)	RM-11778
Request for Modified Coordination Procedures in	)	
Band Shared Between the Fixed Service and the	)	
Fixed Satellite Service	)	

COMMENTS FROM IGOLGI INC. ON USE OF 3.7-4.2 *GHz* Band

In response to the Commission's Public Notice, "Wireless Telecommunications Bureau, International Bureau, Office of Engineering and Technology, and Office of Economics and Analytics Seek Focused Additional Comment in 3.7–4.2 GHz Band Proceeding.", igolgi would like to respectfully submit some points for consideration:

1. The most widespread satellite use for the spectrum is for the distribution of television content to broadcast stations and cable head ends. The proliferation of HD and UHD content at the current rates will require an additional **two** to **four** times the available bandwidth with the current technology. In our view, satellite based broadcast is still the most cost-effective way of distributing broadcast content to the entire nation.
2. Technology improvements in modulation/coding schemes(such as DVB-S2X and other proprietary waveforms) and video compression technology (HEVC, AV1) have the potential to reduce the bandwidth requirements by almost 75%. These technologies are available today, and can be used to free up C-Band spectrum quickly. This will require new equipment at the head ends and the earth stations. Our estimates for such a complete overhaul of the equipment to take advantage of these technology improvements will be around $1.5B. This assumes that the registered 15,000 earth stations will upgrade to 25 HD channels on the average.
3. Even with the above bandwidth savings provided by new technology, the current proposal to clear 200 *MHz* of spectrum would require adding additional spatial satellite capacity just to maintain the current mix of SD, HD and UHD channels. Protecting the satellite transmission with appropriate filters to protect against the envisioned terrestrial 5G services will also be necessary as part of the equipment upgrade at all the earth stations.

The market evolution to HD and UHD further requires that new modulation/coding and compression technology, additional spatial satellite capacity, and 5G filters will all be needed.

Conclusion

Reclaiming a portion of the 3.7 *GHz* to 4.2 *GHz* spectrum for 5G services can be facilitated by a combination of technology upgrades leveraging the latest generation of modulation/coding and video compression technologies, and additional spatial satellite bandwidth. Such a balanced approach would result in the healthy evolution of the video broadcast services towards HD and UHD offerings. Further, since technology upgrades are available today, this could provide a quick method to free up C-Band spectrum.

Respectfully submitted,

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igolgi Inc. is a New Jersey and Illinois based company that has been developing leading-edge software-based video compression technology and products including video encoders and transcoders. We serve the broadcast television, cable, satellite and IPTV distribution markets in the United States.